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Agricultural Situation

Italy and France Successfully Map Grapevine Genome

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Report Highlights: Italy and France successfully map the grapevine genome. The six-million Euro joint research program produced the first analysis of a grapevine's genome. These results can be utilized to develop new, disease-resistant grapevines, reducing the need to use chemical pesticides.

Includes PAD Changes: No
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Italian Agriculture Minister Paolo De Castro praised Italian and French researchers for successfully mapping the grapevine genome. De Castro is quoted as saying: "This is a great achievement in the field of plant biology. The first analysis of a grapevine's genome can now be applied to developing ones that are resistant to disease, reducing the need to use chemical pesticides." Italy and France signed an agreement in Paris in August 2005 to conduct the six million Euro, joint research program into a vine's genome. The goals of the project were: to boost the quality of wines and to protect grapevines from pests, making them better for consumers' health.

The results of the joint Italo-French project were published in the August 26, 2007 edition of the magazine Nature. The project involved researchers from various Italian universities working under a national consortium and the Institute for Applied Genomics (IGA). The French researchers came from the National Genoscope Center and the Institute National per Recherche Agronomique (National Institute for Agronomic Research). According to project chief Enrico Pe', from the University of Milan, the scheme did not involve genetically modified organisms, which remain highly controversial in Europe.

Other goals of the Italo-French project were to increase the grapevine's tolerance of salty and dry conditions, so that grapes can be grown on a wider geographical scale; to produce stronger vines, reducing pruning requirements and loss due to extreme weather conditions; and to delve into the mechanisms of plant reproduction so that vines can be produced in all kinds of conditions.

This latest breakthrough could create a foundation for improving quality traits of currently cultivated grapevines and establish new varieties that are more capable of adapting to the soil and weather conditions of specific wine-growing regions. The European wine industry is currently undergoing a full-scale reform of the common wine market in an attempt to revamp what has become an ailing sector. (Please see FAS Italy GAIN report IT6005 for the Wine Report).

World wine retail sales are expected to increase over the next decade, with most of the growth expected for wine selling at more than \$5 per bottle. Therefore, improving the quality of wine is seen as essential by European wine makers in order to maintain their competitiveness.

The grapevine is the first fruit plant (cultivated for both fruit and beverage) and the second crop plant, after rice, to have its' genome sequenced. Increased knowledge of the biological mechanisms of the grapevine will allow targeted approaches to reduce the number and impact of parasites, which could enable a sustainable, environmentally sound, farming policy.

Results of the study can be viewed on line at the following websites:

<http://www.vitisgenome.it>

<http://www.appliedgenomics.org>

<http://www.genoscope.cns.fr/vitis>